'Top 20' Aspects of Urban Dredging – Portage Creek Project

1) Access – difficult to obtain consent to access due to suspicion of government, desire for indemnity (especially commercial properties i.e, 201 site, junkyard, railroads), insurance (risk management policies at corporate level), loss of use, impacts (noise, space, equipment), and wording (did not offer anything to owners). In some cases, agreements took several months, meetings and assurances to obtain.
2) Noise – Pumps, equipment loud and located near residents, businesses. Established points for noise monitoring 2x/day and document. City ordinance says noise <70db, we exceeded with sound bouncing off buildings. Curtains on 24" pumps caused overheating and difficulty access for service. 12" sound attenuating cabinets worked. Pumps also caused vibration in nearby residences.
3) Dust – Staging pad and SA5D/C/Axtell Creek located in Upjohn Park, a heavily used urban park (pool, rugby tournament, skateboard park, tennis courts, softball fields, jungle gym) by 100-300 kids each day in the summer. Used bed ash (heavier, less dust) and cob in dredging areas near people, cars.
4) Youth Center – Had to remove footbridge into popular, busy park. Built stairway over discharge pipes to get little kids across until bridge removed for summer camp access to park (ADA issue of equal access). Had to stop at 3:00pm on days of day camp. Had to put up signs and notices in senior housing for routing wheelchairs (lots due to proximity to senior center and hospital) around park bridge closure.
5) Bridge closure – Had to prepare closure plan for approval, lots of signage and keep sidewalk open for hospital staff displaced from parking lot. Disruption to nearby business rocked out lot for semi-truck turn around.
6) Discharge pipes – used plugs and floated sections of 18" discharge down creek instead of cutting, trucking to next section, welding up again. Ran in channel under bridges to avoid roadways. Dissipate energy at discharge to minimize turbidity/scour.
7) Pump sizing – add capacity as move downstream to accommodate more inputs.
8) Flooding – Low lying area poorly drained w/ 2.5' drop total between staging pad and Kalamazoo River. High water level on Kalamazoo River caused Portage Creek to flow the other way.
9) Turbidity monitor protection – solar panels targets for rock throwing – aimed away and used wire mesh to protect.
10) Security – Vandals break into equipment, shut off pumps. Locking cabinets on pumps keep them on and hunting cameras shoot pictures of fuel. Locking access gates and off-hoursecurity to control theft/trespassing. Need to train security guards on pump operation and clearly number pumps and use ON/OFF/DOWN magnets to indicate what should be running.
11) Debris – Used a grate to stop debris from entering sump/pumps. Kids throw things into sump area which get caught up in impellers (use clean-outs). Threaded rod criss-cross at suctions to avoid pulling in too much debris (bowling ball got sucked up 12" suction). Some meth production debris and hypodermic needles found.

12) Water channel control – Portage Creek drains Austin Lake to Kalamazoo River. DNR controls water level on Austin Lake via a control dam. Rain 10 miles south of the dredging area can bring up water levels 12-24" in minutes.
13) Infrastructure damage – Broke a lot of aprons, damaged sidewalk, curbs, asphalt – need to replace. Pre- and post-construction documentation of structural features and access points/roadways. Lots of old drains leading into creek broke up during excavation.
14) Traffic Control plans – routes /sizing of trucks to fit in tight corners, access points. Had to find safe locations to drop pups. Gapers, distracted drivers (cell phones, texting), road rage. Used flagger(s) and tried to minimize disruptions at rush hours. Used privacy screening on fences to minimize gapers/accidents.
15) Bridges – Deep and concentrated deposits of paper sludge found around wing walls but did not excavate too close to bridges due to old, damaged wing walls, bridge structures. Also difficult to get cores near bridges due to concrete debris in channel.
16) Controlling inputs from big outfalls, sheetpile around them and put 6" pumps with floats.
17) De-watering operations brought water down in nearby residents basements but when it came back up it was 'our fault'. High water table and springs brought ground water up quick, within 1 hour.
18) Any problem near the site (i.e., broken water, sewer mains, etc) is perceived as attributed to the project. Did not de-water around sewer lines (48" forcemain in SA-6) to avoid collapsing it.
19) GPS signal around trees, buildings difficult to maintain
20) Coordination – Met with landowners, City every Friday at 10am to maintain communication and awareness of progress.